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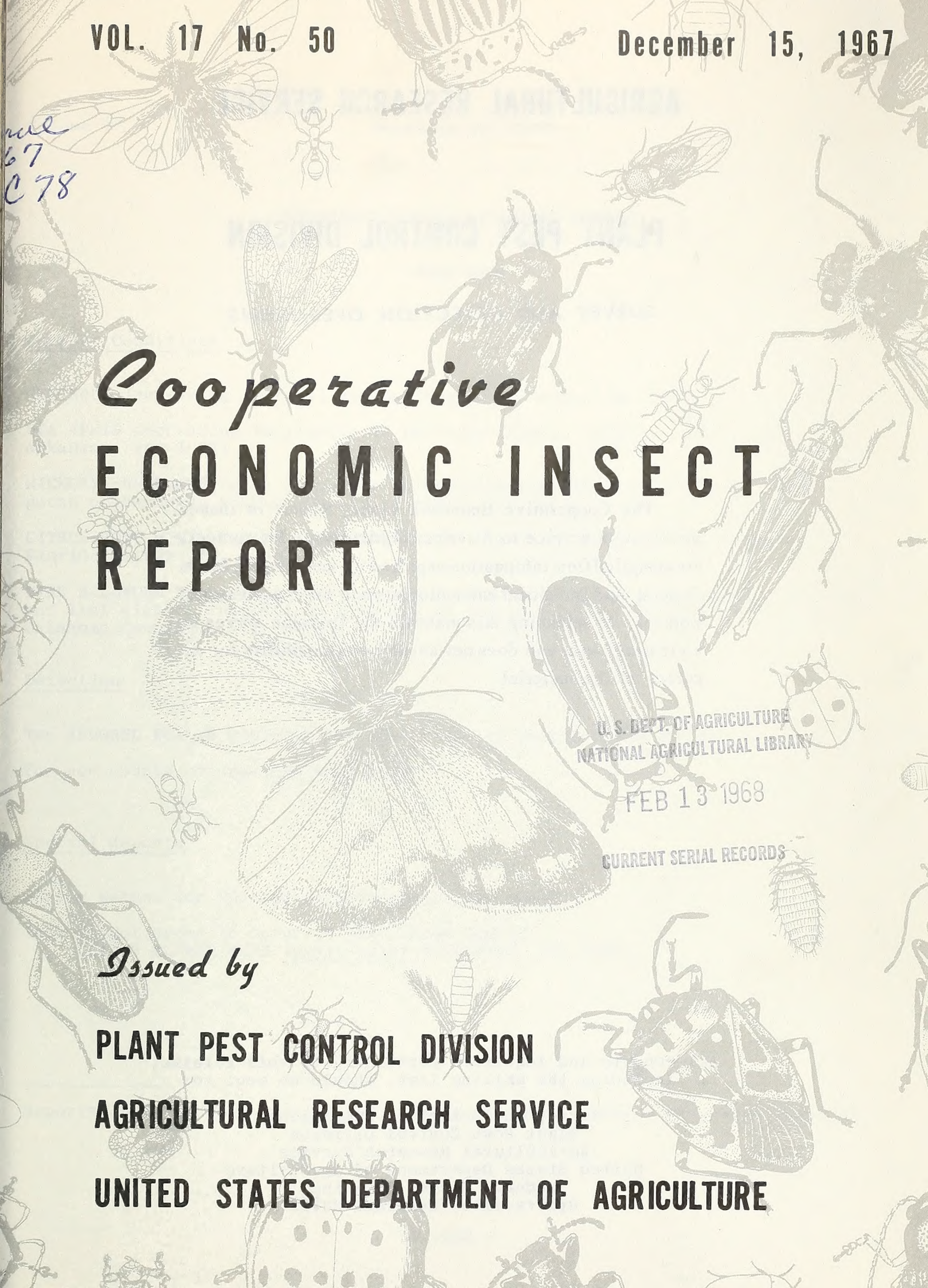

# *Cooperative*
# ECONOMIC INSECT REPORT

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PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

# AGRICULTURAL RESEARCH SERVICE

# PLANT PEST CONTROL DIVISION

## SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Hyattsville, Maryland 20782

Volume 17 December 15, 1967 Number 50

# COOPERATIVE ECONOMIC INSECT REPORT

## HIGHLIGHTS

### Current Conditions

GREENBUG increasing in small grains throughout Texas. (p. 1053).

PEA APHID increasing in alfalfa in Maricopa County, Arizona, and in northwestern Arkansas. (p. 1053).

HICKORY SHUCKWORM heavy on pecans in Mayes County, Oklahoma; damage heavy to pecan orchards in Autauga County, Alabama. (p. 1055).

CITRUS RUST MITE highest and CHAFF SCALE lowest for November in 16 years on Florida citrus. (p. 1055).

PINK BOLLWORM heavier in 1967 than in past several years in Arkansas. Gin trash and lint cleaner inspections positive at all locations through November in 27 Oklahoma Counties. (p. 1058).

### Detection

Two ARMORED SCALES reported for first time in Maryland and California. (p. 1057).

For new county records see page 1058.

### Special Reports

Survey Method for Spotted Alfalfa Aphid. (p. 1060).

Insects Not Known to Occur in the United States
CITRUS FLOWER MOTH (*Prays citri* Millière). (p. 1061).

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## WEATHER OF THE WEEK ENDING DECEMBER 11

HIGHLIGHTS: Stormy weather was the rule over much of the Nation last week. The West continued cold but mild, cloudy, rainy weather prevailed over the Central and East.

PRECIPITATION: The Pacific coast storm continued to soak the Far Northwest with up to 5 inches of rain along the coast, 1 to 3 inches in the interior valleys west of the Cascades, and heavy snow in the Cascades. Rain fell over the central and southern Great Plains on Monday and Tuesday and spread over the northern Plains and eastward to the Appalachians by Thursday. Fog lay over much of the eastern half of the Nation during the latter half of the week. The weekend brought more inclement weather to the middle and eastern sections of the country. Mixtures of snow, sleet, and freezing rain fell in the Lakes region and eastward; combinations of rain, drizzle, and fog occurred from the central and southern Plains to the Atlantic coast, and violent weather lashed the Mississippi and Alabama coast and the Florida Panhandle. Tornadoes occurring in the latter areas on the 9th, 10th, and 11th caused considerable damage and, in Florida, 1 death. Reports of other tornadoes are fragmentary. Freezing rain glazed the roads in western and central New York on Sunday and many schools in the central counties remained closed on Monday morning. Up to 10 inches of snow fell in northern Maine on Sunday. Precipitation was generally light from the Rocky Mountains to the Mississippi River and mostly fair weather with little or no rain prevailed over Arizona and nearby portions of neighboring States.

Weather of the week continued on page 1059

## SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (Schizaphis graminum) - TEXAS - Increasing greatly in small grains throughout State; damaging in isolated areas. Heavy on some fields southeast and southwest of Amarillo in Randall, Deaf Smith, Fisher, and Briscoe Counties; controls applied. Damaging small grains in Denton, Cook, Collin, and Wise Counties; some controls applied. Damaging Gulf ryegrass, rye and oats in Harris County and increasing to economic levels in Stonewall and Taylor Counties; noneconomic in panhandle area north of Amarillo. (Daniels et al.). OKLAHOMA - Averaged less than 5 per linear foot in Garfield, Canadian, and Logan Counties. Averaged 10 per linear foot in Payne County. Ranged 50-150 per linear foot on poor-land wheat and 7-8 per linear foot on good-land wheat in Tillman and Jackson Counties with 6-15 per linear foot in Blaine and Kingfisher Counties. (Okla. Coop. Sur.). ARKANSAS - Absent to very light in northwest area wheat. (Boyer). ALABAMA - Medium to heavy, 1-15 per plant, on all plants in 20-acre Chilton County oatfield; infested 30 percent of 25-acre Conecuh County ryefield. (Futral et al.). KANSAS - Ranged 0-20 per row foot in Sedgwick County and 0-5 in Sumner County with 2-county average less than 3 per row foot; absent in Marion and Butler Counties. (Simpson).

SPOTTED ALFALFA APHID (Therioaphis maculata) - VIRGINIA - Averaged 2 per 10 sweeps on Montgomery County alfalfa. (Isakson). ARKANSAS - Absent to light in northwest area. (Boyer). KANSAS - Absent in alfalfa checked in Marion, Butler, Riley, Pottawatomie, and Shawnee Counties. (Simpson). CALIFORNIA - Moderate on 100-acre alfalfa planting in Saugus, Los Angeles County. (Cal. Coop. Rpt.).

## CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - ILLINOIS - Incidence of microsporidiosis in larvae collected during 1967 fall abundance survey determined by J. Maddox. Average percent infected larvae by district as follows: Northwest 9.6, northeast 4.0, west 33.3, central 2.9, east 2.4, west-southwest 15.3, east-southeast 3.4, southwest 2.6, southeast 0. Total of 481 larvae examined; 67 found infected. (Ill. Ins. Rpt.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - MISSOURI - Light in southwest area corn. Average percent infestation on corn by county during southeast area survey: Dunklin 27.6, Mississippi 34, New Madrid 30.4, Pemiscot 29.4, Scott 10.8, Stoddard 27.8. Collected for first time in Iron and St. Francois Counties. (Munson).

## SMALL GRAINS

ENGLISH GRAIN APHID (Macrosiphum avenae) - MISSISSIPPI - Light on small grains in Oktibbeha and Webster Counties. (Dinkins). ARKANSAS - Absent to very light in northwest area wheat. (Boyer).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - This species and Schizaphis graminum damaging small grains in Denton, Cook, Collin, and Wise Counties; some controls applied. (Daniels et al.).

## FORAGE LEGUMES

PEA APHID (Acyrthosiphon pisum) - ARIZONA - Large increases, up to 4,000 per 100 sweeps, in some alfalfa at Mesa, Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Moderate to heavy in some alfalfa in Artesia area, Eddy County. (Mathews). KANSAS - Light, 5-15 per square foot, in Marion County alfalfa field. (Simpson). ARKANSAS - Increased, 100-200 per 100 sweeps, in alfalfa in northwest area due to warmer weather. (Boyer). VIRGINIA - Averaged 4 per 10 sweeps on Montgomery County alfalfa. (Isakson).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - NEW MEXICO - Adults averaged 3-5 per 25 sweeps in alfalfa near Artesia, Eddy County. (Mathews). ARIZONA - Average per 100 sweeps in alfalfa by county: Maricopa 100, Pinal 110. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - VIRGINIA - Averaged 1 adult per 20 sweeps and 1 larva per 30 sweeps on Montgomery County alfalfa. (Isakson). MISSISSIPPI - Larvae light, 2-3 per square foot, in Oktibbeha County. (Dinkins).

LYGUS BUGS (Lygus spp.) - ARIZONA - Adults averaged 150 per 100 sweeps in Chandler area and 80 per 100 sweeps in other areas of Maricopa County; adults 20 and nymphs 60 per 100 sweeps in Pinal County alfalfa. (Ariz. Coop. Sur.). NEW MEXICO - Adults averaged 3 per 25 sweeps in alfalfa north of Las Cruces, Dona Ana County. (Elson).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Averaged 20 per 100 sweeps in Maricopa and Pinal County alfalfa. (Ariz. Coop. Sur.).

STRAWBERRY SPIDER MITE (Tetranychus atlanticus) - CALIFORNIA - Moderate on 50-acre alfalfa planting in Chino, San Bernardino County. (Cal. Coop. Rpt.).

## SOYBEANS

SOUTHERN GREEN STINK BUG (Nezara viridula) - ALABAMA - Damage by this and other stink bugs not evident with 90 percent of crop harvested in Morgan County. (Rutledge et al.).

## SUGARBEETS

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Larval damage very heavy in two 40-acre fields. (Ariz. Coop. Sur.).

## MISCELLANEOUS FIELD CROPS

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Averaged 80 per 100 sweeps on Maricopa County safflower. (Ariz. Coop. Sur.).

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Light in some Maricopa County safflower. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Adults averaged 120 per 100 sweeps in safflower in Mesa and Tempe areas of Maricopa County. (Ariz. Coop. Sur.).

## POTATOES, TOMATOES, PEPPERS

A SPIDER MITE (Tetranychus marianae) - CALIFORNIA - Heavy on nighshade in Huntington Beach, Orange County. (Cal. Coop. Rpt.).

## COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - FLORIDA - Decreased on cabbage in recent weeks to current low count of 10 eggs and larvae per 100 plants at Sanford, Seminole County; no problem in most commercial fields. (Greene).

IMPORTED CABBAGEWORM (Pieris rapae) - ALABAMA - Larval damage of this and other cabbageworm species evident in commercial cabbage plantings in Mobile County. (Vickery).

## DECIDUOUS FRUITS AND NUTS

TWIG GIRDLER (*Oncideres cingulata*) - ALABAMA - Damaged limbs in some Washington County pecan orchards; numerous 1 to 2.5 foot-long branches of some pecan and persimmon trees falling in Lee County. Egg laying in progress. (Estes, Barwood).

PECAN WEEVIL (*Curculio caryae*) - ALABAMA - Damage heavy to untreated Autauga County pecan orchards; harvest in progress. (Scott).

HICKORY SHUCKWORM (*Laspeyresia caryana*) - ALABAMA - Damage heavy in untreated Autauga County pecan orchards; harvest in progress. (Scott). TEXAS - Infesting native pecan trees in Madison County. (Garrett). OKLAHOMA - Heavy on pecans in Mayes County. (Okla. Coop. Sur.).

PEACH TREE BORER (*Sanninoidea exitiosa*) - ARKANSAS - Concern greater due to poor controls in State. (Wylie, Boyer).

## CITRUS

Citrus Insect Situation in Florida - End of November - CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested leaves in 85 percent of groves (norm 66 percent); 63 percent economic (norm 44 percent). Infested fruit in 83 percent of groves (norm 65 percent); 61 percent economic (norm 44 percent). Population on leaves and fruit at highest November level in 16 years of record. Although decrease expected, population will be in high range in most districts; about 30 percent of groves will have important infestations. All districts high. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 28 percent of groves (norm 36 percent); 12 percent economic (norm 15 percent). Population below normal and very low. Increase will occur; scattered groves will develop heavy infestations. Highest districts north, west, and central. CITRUS RED MITE (*Panonychus citri*) infested 26 percent of groves (norm 36 percent); 8 percent economic (norm 10 percent). Population below normal and very low. Increase expected; some important infestations will develop. Highest districts east and north. GLOVER SCALE (*Lepidosaphes gloverii*) infested 70 percent of groves; 7 percent economic. Population below normal and low; no change expected. Highest districts east and west. PURPLE SCALE (*L. beckii*) infested 50 percent of groves; 1 percent economic. Population will continue very low and unimportant. YELLOW SCALE (*Aonidiella citrina*) infested 56 percent of groves; 3 percent economic. Population below average and in low range. Increase expected. Highest district east. CHAFF SCALE (*Parlatoria pergandii*) infested 36 percent of groves; 2 percent economic. Population at lowest November level in 16 years of record. AN ARMORED SCALE (*Unaspsi citri*) infested 14 percent of groves; infestations mostly light to moderate. GREEN SCALE (*Coccus viridis*) and FLORIDA WAX SCALE (*Ceroplastes floridensis*) more abundant than normal for November but neither important. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

ARMORED SCALES - All stages of *Unaspis citri* severe on stems, leaves, fruit, and bark on 200 of 1,000 grapefruit and orange plants at Ft. Pierce, St. Lucie County, November 30 (Bridges, Hebb); some trees killed as infestation severe but scattered. *Lepidosaphes gloverii* adult damage severe to stems and bark on 10,000 of 15,000 citrus plants inspected at nursery in Springhead, Hillsborough County, November 30 (Vaughan); north half quarantined due to heavy infestation (Fla. Coop. Sur). *Parlatoria pergandii* adult damage moderate to stems and bark of 350 of 8,750 citrus plants at nursery in Springhead November 30 (Vaughan); watch placed on nursery as infestation becoming heavy in localized areas (Fla. Coop. Sur.). CALIFORNIA - *Aonidiella citrina* moderate on citrus nursery stock in Colusa, Colusa County. (Cal. Coop. Rpt.).

COTTONY-CUSHION SCALE (*Icerya purchasi*) - CALIFORNIA - Moderate on dooryard citrus in Woodland, Yolo County. (Cal. Coop. Rpt.).

TEXAS CITRUS MITE (Eutetranychus banksi) - FLORIDA - Adults moderate on 4,200 of 7,000 citrus nursery plants inspected at Springhead, Hillsborough County. (Vaughan, Nov. 30).

## OTHER TROP. & SUBTROP. FRUITS

OLIVE SCALE (Parlatoria oleae) - CALIFORNIA - Moderate on olive leaves, twigs, and fruit in Maxwell, Colusa County. (Cal. Coop. Rpt.).

## ORNAMENTALS

AN ARMORED SCALE (Rhizaspidiotus dearnessi) - FLORIDA - All stages on some partridgepea (Cassia sp.) plants at Stuart, Martin County, October 26, 1967. (Campbell). This is a new Department of Plant Industry host and county record. (Fla. Coop. Sur.).

ARMORED SCALES - FLORIDA - Lepidosaphes maskelli severe on stems and leaves of variegated juniper inspected at nursery in Winter Haven, Polk County, November 20. (Denmark). Gymnaspis aechmeae adult damage severe on leaves of billbergia at nursery in Brooksville, Hernando County, November 29 (Williams); plants under quarantine. Adults infested 60 of 100 bromeliad torch plants at nursery in Lake Worth, Palm Beach County, November 30. (Wyles). Pseudaonidia clavigera moderate to severe on all common and sasanqua camellias at nursery in Tampa, Hillsborough County. (Barber). CALIFORNIA - Diaspis cocois heavy on palm in Carpenteria, Santa Barbara County. D. echinocacti heavy on cactus nursery stock in Yucca Valley, San Bernardino County; very active in 1967. Aulacaspis rosae heavy on roses in Gonzales, Monterey County. Parlatoria oleae heavy on lilac nursery stock in Santa Maria, Santa Barbara County. (Cal. Coop. Rpt.).

CAMPHOR SCALE (Pseudaonidia duplex) - FLORIDA - Found on stems and leaves of camellia at nursery in Suwannee River area, Gilchrist County, November 30 (Graham); all females parasitized (Dekle). This is a new county record. (Fla. Coop. Sur.).

YELLOW SCALE (Aonidiella citrina) - FLORIDA - All stages moderate on leaves on 40 of 200 Japan fatsia plants at nursery in Apopka, Orange County (Kipp); controls recommended. This is a new host record. (Fla. Coop. Sur.).

WHITEFLIES - NEW MEXICO - Heavy on poinsettias in 2 commercial greenhouses in northern area; foliage discolored. (Heninger).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - ALABAMA - Adults heavy and widespread on camellias, chrysanthemums, and many other blossoms throughout Mobile County; adult feeding heavy on late rose blooms and other blossoms this fall and early winter throughout southern and central areas. (Seibels et al.).

ALFALFA LOOPER (Autographa californica) - CALIFORNIA - Moderate on chrysanthemum nursery stock in Half Moon Bay, San Mateo County. (Cal. Coop. Rpt.).

## FOREST AND SHADE TREES

BARK BEETLES - VIRGINIA - Dendroctonus spp. active in City of Chesapeake, and in Orange, Westmoreland, and 14 southern counties; Ips avulsus major pest in October although D. frontalis generally very active. D. frontalis killed loblolly pine in one-acre spot in King William and Chesterfield Counties; active in small spots in Nottoway and Lunenburg Counties. (For. Pest. Sur. Rpt., Oct. Sum.).

WHITE-PINE WEEVIL (*Pissodes strobi*) - VIRGINIA - Damage light to 3 plantations in Giles and Craig Counties. Damage averaged 1 percent of total sample of trees in observation areas; static population indicated. (For. Pest. Sur. Rpt., Oct. Sum.).

WHITE-PINE APHID (*Cinara strobi*) - VIRGINIA - Active on white pine in Prince Edward County; severe discoloration in Charlotte, Pittsylvania, and Orange Counties. (For. Pest. Sur. Rpt., Oct. Sum.). MARYLAND - Eggs heavy on several young white pines at Fallston, Harford County. (U. Md., Ent. Dept.).

AN ARMORED SCALE (*Aspidiotus cryptomeriae*) - MARYLAND - Collected from Canadian hemlock by C. W. McComb at Rockville, Montgomery County, August 10, 1965. This is a new State record. Det. by H. L. McKenzie. (U. Md., Ent. Dept.).

AN ARMORED SCALE (*Clavaspis ulmi*) - CALIFORNIA - Light on catalpa trees in Burlingame, San Mateo County. Collected October 19, 1967, by B. Davis and T. Haig. Det. by R. F. Wilkey. This is a new State record. (Cal. Coop. Rpt.).

PINE TORTOISE SCALE (*Toumeyella numismaticum*) - IOWA - Infesting pine at Wadena, Fayette County. (Gunderson). VIRGINIA - Light on 6 Virginia pines at Frederick County location. (For. Pest. Sur. Rpt., Oct. Sum.).

PINE WEBWORM (*Tetralopha robustella*) - VIRGINIA - Common on scattered plantation seedlings in Lunenburg and Bedford Counties. (For. Pest. Sur. Rpt., Oct. Sum.). FLORIDA - Larvae locally infesting leaves on 47 of 471 loblolly pines in Plant City, Hillsborough County. (Vaughan, Nov. 28).

PINE SAWFLIES (*Neodiprion* spp.) - VIRGINIA - *N. lecontei* larvae active on some loblolly pines in Westmoreland, King George, and Pittsylvania Counties; damage averaged 0.9 percent of total sample of trees in observation areas. *N. pinetum* found on several white pines at 2 locations in Orange County. (For. Pest. Sur. Rpt., Oct. Sum.).

## MAN AND ANIMALS

MOSQUITOES - LOUISIANA - Larvae collected in Jefferson Parish November 24-30; *Aedes vexans*, *Anopheles quadrimaculatus*, *Culex salinarius*, and *C. restuans*; *Aedes sollicitans* and *A. taeniorhynchus* dominant in light trap collections. Larvae collected November 29-December 7: *Aedes triseriatus*, *Anopheles crucians*, *A. quadrimaculatus*, *C. pipiens quinquefasciatus*, *C. restuans*, *C. salinarius*, *C. territans*, *Culiseta inornata*, and *Orthopodomyia signifera*; *Aedes sollicitans* and *A. taeniorhynchus* landing rate counts high. (Stokes).

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 4 cases reported in U.S. December 3-9 as follows: TEXAS - Kinney 1, Maverick 1, Val Verde 1. ARIZONA - Maricopa 1. Total of 179 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Territorio sur de Baja California 68, Sonora 12, Chihuahua 11, Coahuila 38, Nuevo Leon 12, Tamaulipas 38. Total of 40 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operations underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 12,768,000, Arizona 1,120,000, California 200,000, Mexico 71,872,000. (Anim. Health Div.).

HORN FLY (*Haematobia irritans*) - OKLAHOMA - Ranged 12-15 per head on long yearlings in Kingfisher, Blaine, and Payne Counties; up to 100 per head on bulls in Payne County. (Okla. Coop. Sur.).

STABLE FLY (*Stomoxys calcitrans*) - MISSISSIPPI - Ranged 10-15 per animal on and around 8 penned bulls in Oktibbeha County. (Dinkins).

COMMON CATTLE GRUB (*Hypoderma lineatum*) - OKLAHOMA - Averaged less than 3 per head on 60 head of treated feedlot cattle in Oklahoma City packing plant; up to 25 per head on untreated cows and long yearlings. Ranged 10-15 (maximum 32) per head on untreated long yearlings in Payne County. (Okla. Coop. Sur.).

CATTLE LICE - MISSISSIPPI - Moderate on several dairy herds in Oktibbeha and Lowndes Counties. (Dinkins). IOWA - Light in locker plant and field surveys in central, south-central, and southeast areas. (Iowa Ins. Sur.).

A HARD-BACKED TICK (Ixodes marxi) - OKLAHOMA - Single female taken in squirrel's nest in dead tree 5 miles west of Locust Grove, Mayes County, November 24, 1967, by D. C. Arnold. This is a new county record. Det. by D. E. Howell. (Okla. Coop. Sur.).

## BENEFICIAL INSECTS

LADY BEETLES - ARIZONA - Adults averaged 100 per 100 sweeps in Maricopa County safflower. Counts per 100 sweeps in alfalfa by county: Pinal 65, Maricopa 30. (Ariz. Coop. Sur.).

## FEDERAL AND STATE PLANT PROTECTION PROGRAMS

PINK BOLLWORM (Pectinophora gossypiella) - ARKANSAS - Heavier in 1967 than in past several years. Larval counts through November were 260 in gin trash, 9 in lint cleaners, and 28 from bolls in field. Total of 107 adults taken in sex lure traps; one pupa found. Collected for first time in Arkansas, Crittenden, Lincoln, and Desha Counties. (Ark. Ins. Sur.). OKLAHOMA - Positive finds at all locations in 27 counties through November during lint cleaner and gin trash inspections. General increase indicated in field populations for all counties surveyed. Larvae ranged 1-88 per lint cleaner inspection; highest in western and southwestern counties and lightest in eastern and southeastern counties. (Okla. Coop. Sur.). ARIZONA - Generally larvae easily found in remaining unopened green bolls throughout Maricopa County. (Ariz. Coop. Sur.).

## INSECT DETECTION

### New State Records

AN ARMORED SCALE (Aspidiotus cryptomeriae) - MARYLAND - Collected from Canadian hemlock at Rockville, Montgomery County, August 10, 1965, by C. W. McComb. Det. by H. L. McKenzie. (p. 1057).

AN ARMORED SCALE (Clavaspis ulmi) - CALIFORNIA - Taken on catalpa in Burlingame, San Mateo County, October 19, 1967, by B. Davis and T. Haig. Det. by R. F. Wilkey. (p. 1057).

### New County Records

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - MISSOURI - Iron and St. Francois Counties. (p. 1053).

AN ARMORED SCALE (Rhizaspidiotus dearnessi) - FLORIDA - Martin County. (p. 1056).

CAMPHOR SCALE (Pseudaonidia duplex) - FLORIDA - Gilchrist County. (p. 1056).

A HARD-BACKED TICK (Ixodes marxi) - OKLAHOMA - Mayes County. (p. 1058).

PINK BOLLWORM (Pectinophora gossypiella) - ARKANSAS - Arkansas, Crittenden, Lincoln, and Desha Counties. (p. 1058).

## HAWAII INSECT REPORT

General Vegetables - DIAMONDBACK MOTH (Plutella xylostella) larvae trace to light on most crucifers on Oahu; random counts in several areas averaged 5 larvae per 10 plants. Larvae light, 2-3 per cauliflower plant, at Pulehu, Maui. (Funasaki, Miyahira). CARMINE SPIDER MITE (Tetranychus telarius) light to moderate on most and heavy on some snap beans at Waianae, Oahu; very light on windward Oahu. (Yamamoto, Sato). GREEN PEACH APHID (Myzus persicae) counts per square inch averaged 3 compared with up to 115 in early September on eggplant foliage at Pearl City, Oahu. (Funasaki). LEAF MINER FLIES (Liriomyza spp.) heavy on cucumber in some areas of windward Oahu and on tomato and cucumber at Kihei, Maui. Strong winds and rains disrupted spray programs. (Suzukawa, Miyahira).

Fruit and Nuts - SOUTHERN GREEN STINK BUG (Nezara viridula) buildup damaged about 8 percent of macadamia nuts in orchard at Puna, Hawaii Island. Occasionally light to moderate on many crops throughout Oahu areas. (Yoshioka, Yamamoto). FRUIT FLIES - Larvae per pound of fruit collected on Hawaii: 304 Mediterranean fruit flies (Ceratitis capitata) in Jerusalem-cherry from Mauna-Loa Truck Trail at 4,250 feet elevation and 248 melon flies (Dacus cucurbitae) from Honomalino at at 1,700 feet elevation. Infestations of C. capitata and oriental fruit fly (D. dorsalis) mixed in other collections (guava, coffee, litchi, plum, and mountain apple) during June to August on Hawaii Island; D. dorsalis heaviest in guava (72 percent) and mountain apple (63 percent). Braconid parasite recoveries of predominately Opius oophilus greatest from litchi, coffee, and rose apple; parasitism ranged 63-81 percent. O. fletcheri, a parasite of melon fly, recovered in larger numbers than usual from momordica; O. tryoni, a parasite of Mediterranean fruit fly, recovered in large numbers from Jerusalem-cherry. (Hawaii Fruit Fly Investigations, USDA).

Shade Trees - BLACK THREAD SCALE (Ischnaspis longirostris) moderate on foliage of several Chinese banyan trees at Lihue, Kauai. (Funasaki).

## LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville - 12/4, BL - Armyworm (Pseudaletia unipuncta) 11, black cutworm (Agrotis ipsilon) 2, fall armyworm (Spodoptera frugiperda) 1, granulate cutworm (Feltia subterranea) 2. Sanford - 11/27-12/1, BL - Black cutworm 9, cabbage looper (Trichoplusia ni) 43, corn earworm (Heliothis zea) 16, fall armyworm 2, granulate cutworm 23, tobacco budworm (Heliothis virescens) 1, yellow-striped armyworm (Prodenia ornithogalli) 13. TEXAS - Brownsville - 12/2-8, BL, 48-80°F., 0.87 precip. - Armyworm 50, black cutworm 132, cabbage looper 25, granulate cutworm 23, salt-marsh caterpillar (Estigmene acrea) 5, tobacco budworm 1, variegated cutworm (Peridroma saucia) 20, yellow-striped armyworm 46.

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Weather continued from page 1052

TEMPERATURE: It was the second cold week over the Great Basin, the Far Southwest, and the central and southern Rocky Mountains. Subzero temperatures occurred in parts of the northern and central Rockies and the Great Basin on 1 or 2 mornings. Alamosa, Colorado, registered 14° below zero on Sunday morning. A large area from eastern Nevada to western Colorado averaged 5° to 9° colder than normal. Rapid warming occurred over the East early in the week and exceptionally mild weather prevailed over Montana and from the Dakotas to Texas and eastward to the Atlantic Ocean. Afternoon temperatures on most days ranged from the 40's over southern Michigan to the 70's near the Gulf of Mexico and most stations registered freezing temperatures only on Monday, December 4. In some areas, it was the warmest week since mid-November. Wide areas from the Missouri River to the Appalachians and southward to the gulf averaged 6° to 10° above normal. (Summary supplied by Environmental Data Service, ESSA.).

# SAMPLING METHOD FOR THE SPOTTED ALFALFA APHID

M. W. Nielson*

History: The spotted alfalfa aphid (Therioaphis maculata (Buckton)) was introduced into the United States in 1954. In a very short time the pest spread to nearly every State where alfalfa was grown and caused high losses to the alfalfa industry. In recent years, the aphid has not been considered an important pest of alfalfa owing to the use of resistant alfalfa varieties and other means of control. However, the insect can become a serious pest in areas where resistant varieties are not grown or if the insect should develop biotypes which cannot be controlled by presently grown resistant varieties.

Habits: The aphid prefers to feed on the underside of alfalfa leaves near the base of the plant. As the population increases, the insect will feed on stems and eventually work upward as the lower leaves are killed. The aphid will drop off the leaves when disturbed. Copious amounts of honeydew are produced by the aphid. When the plants are being killed, thus restricting food supply, the aphid will produce winged forms which migrate to other more attractive alfalfa fields. In the Southwest, reproduction is exclusively by parthenogenesis. Sexual forms are produced in the colder climates where the aphid overwinters in the egg stage.

Seasonal Abundance: In Arizona, three distinct population peaks occur. Sometimes a fourth peak takes place in January. Usually the main population peaks occur in April, July, and October. Surveys and population counts should be taken just before the period when these population peaks are likely to occur.

Sampling: Sampling alfalfa fields with a sweep net is useful only to determine the presence of the spotted alfalfa aphid in alfalfa. A simple, practical, and accurate method of estimating populations in the field is by the leaf-count system. Aphids are counted on three trifoliolate leaves, each selected at random from the top, middle, and bottom of plants. These subsamples should be repeated 10 times at random intervals of 20 to 50 walking steps in a diagonal fashion across the field. Thirty trifoliolate leaves will thus represent the total sample from one field. Care should be taken during sampling to minimize disturbance and subsequent loss of aphids dropping from the leaves. To avoid loss, the leaf petiole is grasped by the thumb and forefinger and slowly turned until the entire underside of the leaf is clearly visible.

Resistant alfalfa varieties are recommended for control of the spotted alfalfa aphid. However, aphids will occasionally build up on seedlings of some resistant varieties. Treatment with recommended insecticides is necessary on all varieties when the aphid population reaches an average of one per seedling in seedling fields or five per trifoliolate leaf in older stands. One seedling is equivalent to a sample of one trifoliolate leaf of older plants Thus, 30 seedlings should be included in the sample for alfalfa fields in the seedling stage. An alfalfa seedling is defined as that stage of the plant between the appearance of the unifoliate and the first trifoliolate leaves.

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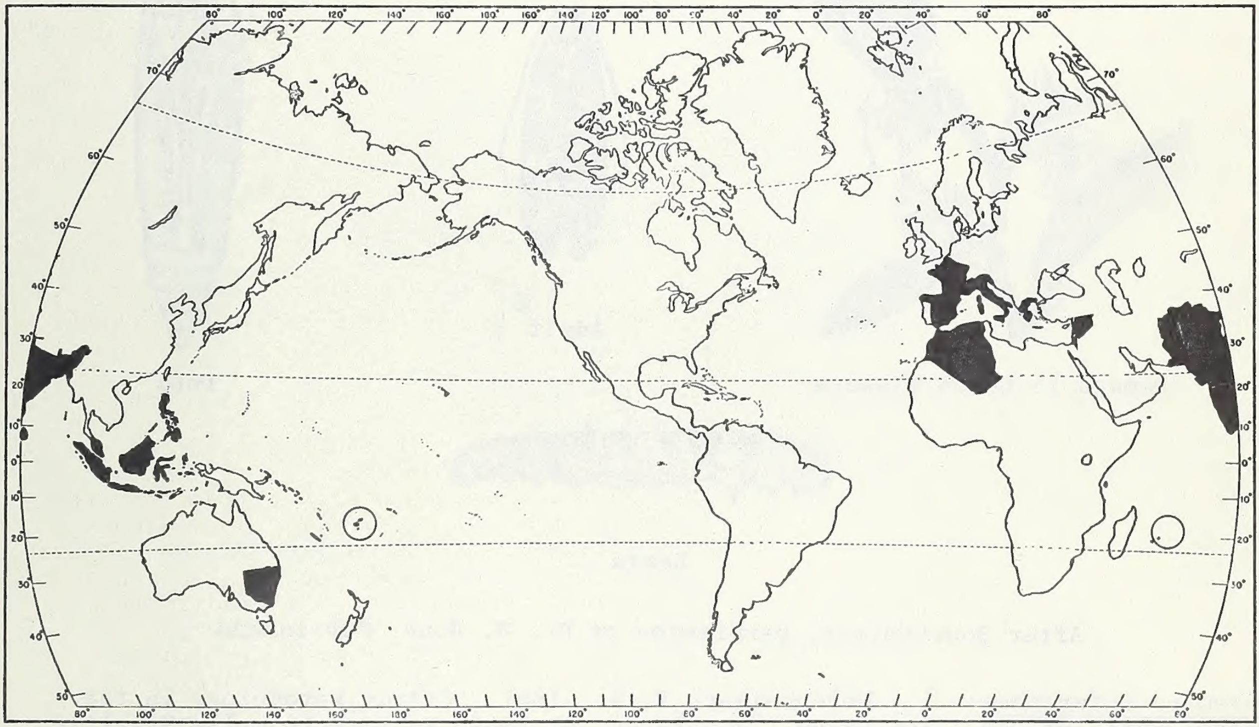
## INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

## CITRUS FLOWER MOTH (Prays citri Millière)

Economic Importance: Larvae of this yponomeutid moth are very destructive to many species of citrus especially lemons and oranges. They reduce production of fruit and may prevent development. One type of damage occurs after the fall-grafting of citrus in Israel. Larvae penetrate the raffia dressing around the graft-union to feed in the cambium. The union dries and the buds die. A second type occurs in the Mediterranean area where larvae feed on the floral parts and web them together. They penetrate the calyx to feed. The resultant damage reduces yield. A third type of damage occurs in the Philippines and India where larval feeding in the fruit rinds causes galls to appear on the fruit surface. Fruits either drop off the tree before they are mature or if they remain there, become unmarketable because of unattractive galls. Up to 30 galls may be found on a heavily infested fruit. Exit holes made by larvae before pupation permit the entrance of fungi and mealybugs in the fruit.

Distribution: Algeria, Australia (N. S. Wales), Ceylon, Fiji Islands, France (including Corsica), Greece, India, Indonesia, Israel, Italy (including Sicily and Sardinia), Malaysia, Mauritius, Morocco, Pakistan, Philippines, Spain, and Syria.

Hosts: Many species of citrus.

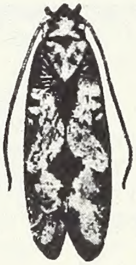


General Distribution of Prays citri Millière

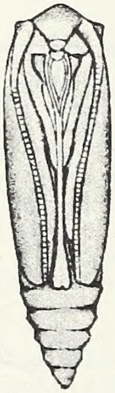
Life History and Habits: Under conditions in the Campania area of southern Italy, the biology is as follows: Females deposit 60-150 eggs on the corolla or calyx of flowers of various species of citrus. Hatching occurs in 4-12 days and larvae eat the flowers and mature fruit. Larvae form galleries in the fruit and generally remain there until time to pupate, but sometimes they will leave and enter another fruit to feed before pupating. The length of the larval stage is usually 20-22 days but may be 30 days in the seventh generation. Larvae leave the fruit and pupate in a loosely woven cocoon inside the calyx. Although pupation usually lasts 10 days, it may require up to 71 days in the seventh or overwintering generation. In the Philippines where only 5 generations have been recorded, eggs are laid on the fruit but seldom on the flowers.

Description: ADULT - Length 2.8 - 3.2 mm. grayish brown with light gray membranous hind wings. Many irregular markings on hind wings. Long, narrow wings with fringe which is much broader in hind wings. Head, thorax and abdomen light brown. EGG - Length 0.2 mm. Subelliptical and colorless to light yellow but turns darker before hatching. Surface with network of irregular hexagons. LARVA - Length when full grown 4.2 - 5.5 mm. but may extend to 12 mm. in southern Italy. White in first stage but turning to light green with dark brown head when full grown; semi-transparent. Color of larva may vary under different conditions. Sparse fine hairs covering body which is 14 segmented. Dorsal surface of abdominal segments with thin brownish line extending to lateral margin. PUPA - Length 4.8 - 5.5 mm. Chocolate brown in color and fastened to host plant by silken threads.

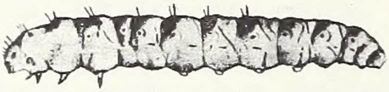
Damage to Lemon Flowers



Adult



Pupa



Larva

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